

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
20 January 2005 (20.01.2005)

PCT

(10) International Publication Number
WO 2005/005391 A1

(51) International Patent Classification⁷: C07D 213/803,
213/80, 40/14

(21) International Application Number:
PCT/EP2004/006893

(22) International Filing Date: 25 June 2004 (25.06.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/484,485 2 July 2003 (02.07.2003) US

(71) Applicant (for all designated States except US): BASF
AKTIENGESELLSCHAFT [DE/DE]; 67056 Lud-
wigshafen (DE).

(72) Inventor; and

(75) Inventor/Applicant (for US only): LEVY, Michael, A.
[US/US]; 4106 West Ely Road, Hannibal, MO 63401 (US).

(74) Common Representative: BASF AKTIENGE-
SELLSCHAFT; 67056 Ludwigshafen (DE).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,
SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: IN-SITU TREATMENT OF PYRIDINE-2,3-DICARBOXYLIC ACID ESTERS WITH AN OXIDIZING AGENT

(57) Abstract: A method for the in-situ treatment of a pyridine-2,3-dicarboxylic acid ester with an oxidizing agent, such as hydrogen peroxide, to improve product quality is provided. The method for the in-situ removal of impurities from a saponified solution of pyridine-2,3-dicarboxylic acid ester comprises the steps of providing a solution of pyridine-2,3-dicarboxylic acid ester, saponifying the solution with a base to form the corresponding pyridine-2,3-dicarboxylic acid salt, reacting the solution with an oxidizing agent in an amount effective to remove impurities, acidifying the solution with an acid to convert the pyridine-2,3-dicarboxylic acid into the corresponding pyridine-2,3-dicarboxylic acid, and collecting a purified solution comprising pyridine-2,3-dicarboxylic acid. Further provided is a method for the preparation of herbicidal 2-(2-imidazolin-2-yl)nicotinic acids, esters, and salts by using a pyridine-2,3-dicarboxylic acid salt prepared by the above method as an intermediate.



WO 2005/005391 A1